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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Aulis Jamia

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STITES & HARBISON PLLC
1199 NORTH FAIRFAX STREET
SUITE 900
ALEXANDRIA, VA 22314

EXAMINER

DYE, ROBERT C

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,512	Applicant(s) JAMIA, AULIS	
	Examiner ROBERT DYE	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is a Final Office action in response to Applicant's reply dated 4/28/2009 to a Non-Final Office action. Claims 1-2 and 4-8 are pending.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim 1 and 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martilla (USP 5,928,482, of record) in view of Cornils et al. (RE37,341), Cordes et al. (USP 5,332,538), Jones et al. (USP 5,736,086, of record) and Hanai et al. (PGPub 2002/0076527).

5. Martilla teaches a method of forming a strip of plastic material on the edge of an anode or cathode metal sheet comprising the steps of providing the sheet with holes ("perforating"; col 3, line 49), fitting the edge of a conductive sheet inside of a die space,

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feeding plastic material into the die space and moving an extruder around the edge of the sheet (filling of perforations would be intrinsic, col 2, lines 37-46; col 3, lines 41-67).

While Martilla teaches the molding of a strip of plastic material about the edge of an anode or cathode sheet, the molding device is comprised of a separated mold die 7 fixed to the sheet and mobile die/extruder 9-11. The process requires additional steps of attaching mold 7 to the die, positioning the extruder with respect to the die and then detaching mold 7 when the molding is complete—thus the die of Martilla does not move with the device around the sheet edge. In the same field of endeavor of forming plastic material on a sheet edge. Cornils et al. (hereinafter Cornils) discloses an apparatus wherein the die and the extruder are combined as a single movable device (Fig. 1). it would have been obvious to one of ordinary skill in the art at the time of the invention to use the edge molding device of Cornils in the method taught by Martilla because one of ordinary skill in the art would have been able to carry out such a substitution to achieve the predictable result of forming a plastic strip on the edge of the sheet. “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007). One would have been motivated to eliminate the steps of attaching and detaching a separate molding die 7 from the sheet during the forming process. In Cornils, only a single molding device is required to form the edge, thus simplifying the molding procedure.

6. In the method of Martilla in view of Cornils, the polymer solidifies after exiting the extruder, thus a cooling step is inherent. Conventional cooling entails the loss of heat

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from the hot article via the surface to a cooling medium, such as ambient air. It would be expected that the outer surface of the strip which is in direct contact with the cooling medium to cool and harden faster than the interior of the strip which is immediately adjacent to the sheet.

7. Martilla does not teach the method wherein the die space is heated and the sheet is preheated prior to application of the strip. In the same field of endeavor of molding a plastic strip onto the edge of a sheet, Cordes et al. (hereinafter Cordes) teaches that it is advantageous to "inject the material into an already preheated mold, because in this way at the start of the injection procedure the material has a viscosity which decreases enabling it to penetrate into the smallest unevenness in the mold" (col 4, lines 48-54). Cordes teaches that this gives the molded part having neither bubbles nor deficiencies in remote areas. Martilla is noted as teaching a roughened or perforated surface (col 3, line 49). Thus, it would have been obvious to a person having ordinary skill in the art to preheat the mold as taught by Cordes in the method of Martilla to ensure that the polymer material injected into the die space sufficiently fills the roughened/perforated surface of Martilla to prevent voids from forming.

8. The combination of Martilla, Cornils and Cordes still do not teach the method wherein the sheet is preheated to a temperature at least 10-200C warmer than the temperature of the material fed into the die space. However, it is well known in the art of applying plastic material to a preform to preheat the preform. In the same field of endeavor of applying a plastic material to a metal sheet, Jones et al. (hereinafter Jones) teaches that the metal sheet can be preheated to a temperature of about 150 to 350C

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and the applied polymer will be at least as high as about 250C (col 3, liens 47-48, 55-56). Thus Jones suggests that the metal sheet may be heated to a temperature greater than the polymer. As for the motivation to combine, in the same field of endeavor of applying plastic strips to a sheet edge, Hanai et al. (hereinafter Hanai) teaches that by preheating the sheet, it is possible to prevent early or rapid solidification of the extruded molding materials that may result in inferior performance of the formed molding and further, prevents the loss of fluidity of the molding material during the extrusion process (paragraph [0068]). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to preheat the metal sheet as taught by Jones in the method of Martilla, Cornils and Cordes for the purpose of preventing the rapid or undesirable solidification of the polymer during the extrusion process as taught by Hanai.

9. Regarding claim 4, the apparatus employed in the above combination supplies molten plastic material under pressure into a die cavity and extrudes said material onto the edge of a sheet. The presence of a back pressure at the discharge opening of the die would be inherent.

10. Regarding claim 5, Cornils teaches that the extruder device may be fixed and the pane can be moved through it (col 8, lines 63-68).

11. Regarding claim 6, Cornils teaches that the extruder device may be moved along the edge of the sheet (col 6, lines 35-37).

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12. Regarding claim 7, Cornils teaches that the extruder device bears against the sheet on the upstream side of the die (col 4, line 41; col 5, lines 43-45). Thus, the extruder has parts which plug the opening portions. The apparatus of Cornils also contains movable sealing portions which further close the die inlet.

13. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martilla (USP 5,928,482, of record) in view of Cornils et al. (RE37,341), Cordes et al. (USP 5,332,538), Jones et al. (USP 5,736,086, of record) and Hanai et al. (PGPub 2002/0076527) as applied to claim 1 above, and further in view of Honig (PGPub 2002/0030301, of record).

14. The hypothetical combination of Martilla, Cornils, Cordes, Jones, and Hanai teach the method of forming a plastic strip on the edge of an anode/cathode sheet as described above; however, the combination does not teach a method wherein the strip is actively cooled following extrusion. In the same field of endeavor of forming plastic edge strips on a sheet material, Honig teaches that "formed strip travels past a cooling device which uses either air or water to cool the formed strip" ([0044]) for the purpose of increasing the rate at which the edge strip solidify. It would have been obvious to a person having ordinary skill in the art at the time of the invention to actively cool the formed strip as taught by Honig in the method of Martilla (combined) for the purpose of increasing the rate at which the edge strips solidify and thus reduce the required processing time.

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15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martilla (USP 5,928,482, of record) in view of Cornils et al. (RE37,341), Cordes et al. (USP 5,332,538), Jones et al. (USP 5,736,086, of record) and Hanai et al. (PGPub 2002/0076527) as applied to claim 1 above, and further in view of Ecklund et al. (USP 3,239,402).

16. In the combination as discussed above for claim 1, Hanai discloses the advantages of preheating the preform to which a plastic material is to be applied. The combination, however, does not teach applying heat directly to the edge of the sheet. In the same field of endeavor of applying plastic strips to the edge of a sheet, Ecklund et al. (hereinafter Ecklund) teaches a process wherein the edge of a sheet (which can be metal, col 2, line 54) is preheated prior to the application of a plastic strip (col 2, lines 68-72). It would have been obvious to a person having ordinary skill in the art at the time of the invention to preheat only the portion involved in the molding process as taught by Ecklund in the method of Martilla (combined) for the purpose of reducing energy costs associated with heating. A person having ordinary skill in the art at the time of the invention would have recognized that preheating the entire preform is unnecessary since only the edge portions are involved in the molding operation.

Response to Arguments

17. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT DYE whose telephone number is (571)270-7059. The examiner can normally be reached on Monday to Friday 8:00AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph S. Del Sole can be reached on (571)272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCD

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 1791